T—Y—N—E—&—W—E—A—R

TYNE & WEAR

ATARI 8-BIT USER GROUP

Newsletter of TWAUG

Software

Editorial

Buy & Sell

Hardware

TYNE&WEAR ATARI USER GROUP

Reviews

Help line

Section

Repair Info

Public Domain Library

ISSUE #10

July/August 1994

U—S—E—R—G—R—O—U—P

or contact T.W.A.U.G. we will do our best to help.

TWAUG NEWSLETTER



EDITORIAL

Who to blame!!!

John Matthewson
David Ewens
Max Gerum

We have had a number of requests to put all listings onto the issue disk.

As you will know on a number of occasions we ARCed some files due to lack of space. To accommodate all listings on the disk we will have to format the disks in enhanced density. If there is anyone whose disk drive cannot read 1050 medium density please let us know.

PUBLIC DOMAIN Library

We are a non-profit making group and we rely mainly on selling our PD disks to cover our expenses. Have you had a good browse through our PD list lately? You may have seen a program or two you may want to add to your library, why not try and place a small order. You see by selling some PD disks it helps us to get new programmes to put into the library for you to enjoy.

Some of our regular customers are really superb in their support and we do appreciate it very much.

Now a little bit of news, we are adding two more double sided Print Shop icons disks to our PD library and they are available now.

The next issue will be ready by mid-September.

CONTENTS

TWAUG NEWSLETTER



LETTER SECTION



Dear TWAUG,

Firstly why don't you put the programs that are in the mag on disk as well, such as your small demos and the programs from articles etc, like Page 6.

How many articles are in the 'Cracking the Code' series?

Since purchasing my 256K 800XL, I have come over two things that annoy me.

First the screen has a vertical grain throughout and in the game 'Mercenary' dark rooms are completely black, unlike my 64K 800XL where dark rooms have an outline of the corners!

Secondly when I switch my 64K 800XL quickly Off and On, the system reboots everytime, unlike my 256K 800XL *when I do* this the system usually locks-up or reboots with garbage all *over the screen. I have checked both machines* and there are capasltors near the OFF/ON switch that are different, could this be causing the slow clean reboot?

I have found a software patch to get a clean reboot by either typing 'BYE' in Basic/TB or in DOS 2.5 by typing 'M: run address' and entering 'E74I', which I think is the Self-Test vector, then hold the Option key and press Reset.

I am also *looking for reverse engineering* (dis-assembly) type programs can you recommend any good ones? Either commercial or PD.

Yours faithfully

Andrew MCINTOSH
21 Roman Road
Bonnybridge
Stirlingshire FK4 2DE

Editors' Reply:

Thank you for your letter. Now your first paragraph asks, why not put the programs in the mag also onto the disk? At present the disk is in single density and to include more programs we would have to format the disk in *medium density*. In the Editorial I am asking if anyone objects to the idea of *enhanced density*.

The Cracking the Code series is in 16 parts. All these parts have to be typed into the editor before printing can begin and therefore, the listings will not be included on the disk. It would take far to much of my time to type the listings out, save them and check for errors.

About the annoying things that's happening to your 800XL. It takes a *standard 800XL about ten seconds* to clear its memory, when switching it Off and On. The upgraded XL has the 130XE OS installed and so its memory clears very quick. But you must be flicking the switch Off and On so quick in succession that it hasn't got time to clear.

Can anyone help Andrew with his vertical grain on his screen and why the dark rooms are completely black in Mercenary. Does any person has the *reverse engineering dis-assembly* type program which Andrew is requesting? Get in touch with *him or write to TWAUG for the answers to be published.*

BUY and SALE SECTION

For Sale:

41 original tapes. £1 each or £35 the lot. 1029 printer £50 including postage.
1029 printer £15 (for spares) including postage.
810 disk drive with write protect switch, no power unit. £50 including postage.
Write to:
Paul Hampshire
126 Walter Greenwood Court, Salford 6, Manchester, M6 5EF

Atari 800 48K + *PSU, 810 disk drive + PSU, 410 recorder +* PSU, plus software all GWO
£75.00 plus £15 postage, due to them being heavy and bulky may have to come seperately.
Will split, make me an offer.
Contact:
Dennis Heartwhite
34 Matfield Crescent, Brighton, BN1 8HQ

800XL, 1050 disk drive, 1010 tape deck all boxed as new (no tatty boxes) in original packaging with books, mags, disks and tapes. Sell for £120 o.n.o. TEL. (0602) 720597.

800XL, 1050 disk drive including powerpacks/leads £70. Mapping the Atari *(revised) £10, Computes First and Second* books of Atari £7 each, Computes First book of Atari graphics *£7 or offers.* TEL. (0602) 720597.

WANTED:

Desperately seeking Roms. Karateka, Orc Attack, River *Rescue, Frogger,* Pitstop, Summer Games, Congo Bongo plus others preferably Boxed with instructions.
Please telephone (0602) 720597 or write to
Mark,
55 Bridge St, Long Eaton, Nottingham, NG10 4QS.

Versawriter, Graphics Composer, Globe Master Capture, Mistery box, Simon Says
Ring Dennis on 0273-540661

HINTS & TIPS

MERCENARY, ESCAPE FROM TARG

At location 64997, altitude 08-08, there is a Palyar Colony craft. On the ground floor you can find a key. Damaged buildings can be rebuilt by firing at the remains while holding the anti-time bomb.

The metal detector shows who owns a particular building by displaying a color in the message window. GREEN is a Palyar building, BLUE is a Mechanoid building, and RED means that it has no owner.

MIG ALLEY ACE

In 2 player mode the other player can't accelerate or decelerate when you are doing the same.

MINER 2049'er

While you're playing the game, type the code 213 782 6861. Then you can press SHIFT and 0-9, where 1=level 1, 2=level 2, and so on.

Also, start the game off in a safe place, then type the code 213 782 6861 and carry on playing as normal. If you should fall off the cliff or get fried by the aliens, before you die, quickly press SHIFT and press the number of the level you're on. You'll now start at that level again, but your number of lives will be the same as before. Neat eh?

MIRAX FORCE

Type CPM at the title screen for immortality.

MISSILE COMMAND

Press CONTROL and C together and you will begin on level 5. Press CONTROL and Z together a few times and sometimes you'll be surprised.

MISSION SHARK

If you type in the name of the author, JANUSZ PELC, then you can select the starting level by pressing 0 to 9.

MONTEZUMA'S REVENGE

Right at the start, climb to the top of the rope, then hold down SELECT and pull the joystick down. You'll now enter a different room.

OLLIES FOLLIES

Level 5:FANDA
" 10:FRANK
" 15:NORBI
" 20:ZODM

ONE MAN AND HIS DROID

Passwords:

2:bubble	3:atari
4:finders	5:genetic
6:zapped	7:megasonic
8:timewarp	9:ectoplasm
10:gorgeous	11:seaside
12:gizmo	13:king kong
14:hologram	15:curry rice
16:coffee	17:cassette
18:telescope	19:computer
20:edacraeda	

ONE ON ONE BASKETBALL

If when you get the ball, you are facing your opponent, press the fire button quickly to turn around, putting your back between the ball and your opponent.

When playing against the computer, be Dr. J. Erving, as he is the faster player and does not tire out so easily.

PHARAOH'S PYRAMID

The code word is THRONE.

PITFALL

Start off the game by pressing the OPTION key and you'll live forever.

POLAR PIERRE

To get to the top of the 3rd level there is a trap door just past the 2nd shooter. To use it, simply stand on the trap door and jump. You'll land safely right on the top of the flags.

POLE POSITION

Place a weight on the SPACEBAR and the race car will slow down a bit to give you a better chance to complete the entire 8 laps.

PREPPIE

Before you begin a game, press the Shift-Control & Atari (Inverse) keys to start at a secret level.

Press the Shift-Control & Insert keys to toggle between 3 and 5 lives.

If you carefully put a weight on the CONTROL and the 5 key, the action may slow down a wee bit, but it often disables the timer.

RAMPAGE

On some buildings you can climb to where the windows end and punch the buildings as much as you like to get loads of points.

When your partner dies and turns back into a human, you can then run over and eat him. Yummy.

HINT & TIPS continued

RESCUE ON FRACTALUS

If you let an alien aboard your ship and the mother ship is orbiting, press B for the boosters. The ship will swerve wildly about, but eventually it will climb above the atmosphere and the alien will die in empty space. Zzphaaaap!

ROBIN HOOD

If there's a dot moving up and down either edge of the screen, then there is an enemy close at hand.

ROGUE

Instead of pressing T for the map, press OPTION. You can still move about but it's slower.

SCROLLS OF ABADON

Use a joystick in port 2 and type POW to move the creatures.

SNOKIE

Press the number of the wave you wish to go to tyou must have reached that level first).

SPARE CHANGE

Pressing Ctrl-Z will bring you to the zerk control panel.

SPELUNKER

Attention hackers. In sector 28 on the diskette, look for this hex string: A6 C8 30 2D. Change it to: A2 07 86 C8. This will give you unlimited men. WARNING: always use a backup copy!

SPY vs SPY I

Let the other sucker ('er player) collect all of the objects and when he has got them, go into the same room as him and fight him. If you fight him and win, collect the objects from the picture/table/desk in the room and simpty go to the airport! Easy eh?

SPY vs SPY II (ISLAND CAPER)

Remember this little rhyme, "Stay to the right to win the fight!".

If worst comes to worst, and you don't have all of the objects, and your opponent has the others, just walk into the water and drown yourself. Now your opponent can't win and a beautiful memorial service will be televised in your honour.

SPY vs SPY III (ARCTIC ANTICS)

If you have one of the pieces and your opponent has the rest, go into an igloo and don't come out.

Now your opponent can't win!

STARQUAKE

After loosing your last life, hold down the pause keys (SHIFT/P) and move the stick down. If you now get killed you will have 100 lives, even though the display shows 00.

These are the transporter codes:

TRIAD	KERNX	WHOLE	MINIM
SALCO	COSEC	ARTIC	QUARK
ARGON	DELTA	CRASH	Z.A.P.
PENTA	ATARI	SECON	

TOMAHAWK

Land and fly around on the ground by pushing forwards on the joystick and by using the rudder to steer. When you find an enemy, fly up to it hover and shoot. You can hover in front of an enemy tank and it won't shoot back!

TRACK ATTACK

On the box car scene, listen for a click from the keyboard, then t second later, jump. You'll have to be quick though!

THRESHOLD

Remove the Threshold disk from the drive after the main load, then everytime the drive tries to restart you will be advanced one level. To start at the level you want, simply re-insert the disk when the drive is off.

TRACK AND FIELD

Set the high jump bar to 2.40m and you'll find that you can sometimes sliiiiiide right underneath it.

TWILIGHT WORLD

If you see cracks in any of the walls, it's very likely that there's an entrance to a secret level there.

WARHAWK

Watch out for flashing spaceships. Only shoot at it once and it will change. Touch it and get more firepower.

WHIRLYNURDS
Code: IAMTHEHUNGRYDUDE

WINTER OLYMPIAD 88

You should press the stick in the given directions, before and while you're turning, in order to make a record bobsled run:
R-L-R-R-L-BL-R-L-R-L-R-L-L-R-R-BR-BL-R-L

R = Right turn
L = Left turn
BR = BIG Right turn
BL = BIG Left turn

CRACKING THE CODE

by Keith Mayhew

Re-printed by M. Gerum

This article first appeared in "The UK ATARI Computer Owners Club" later renamed "MONITOR"

Part 10

Last time the basic operation of player/missiles was covered. This time we conclude their study and start looking at how ANTIC's display lists are built up and used to create custom display screens.

PLAYERS AGAIN

The program from last time demonstrated how image data is stored in a player table and displayed on the screen. Figure 1 shows the format of the player table expected by ANTIC. The first part of the table is not used for the creation of players or missiles and so this space can be used to store other data. The four missiles share the next part of the table, each taking two bits each with the four players occupying the rest of the table. The data from each segment of the table is displayed from top to bottom of the display as the memory locations increase (that is down the table as it is drawn). The figures to the left of the table refer to the offsets to the segments of the table for single line resolution mode.

In this mode the table occupies a total of 2K bytes with each segment containing 256 bytes to cover the screen display from top to bottom with each byte of data being displayed on one scan line.

The mode used in the program last time was double line resolution. This mode halves the size of the table to 1K bytes with 128 bytes for each segment; the offsets for this mode are shown to the right of Figure 1. In this mode each byte from the table is mapped onto two lines of the display, ie, it is drawn twice in succession.

Athough memory is saved by creating a less detailed image in the double line mode the vertical movement of the image will jump by two lines as it is moved a byte at a time up or down the table. To produce a smoother movement in this mode the vertical delay register, VDELAY, can be used. This register uses each bit to control a player or missile. Bits 0 to 3 correspond to missiles 0 to 3 and bits 4 to 7 correspond to players 0 to 3. By setting a bit the appropriate player or missile will be displayed after a delay of one scan line, ie, it will be moved down by one scan line. Thus to create a smooth movement of a player or missile in double line resolution requires setting a bit in VDELAY for one movement down and then resetting it and moving the image down one byte in the table for the next movement of one scan line. Obviously the reverse of this rule applies when you wish to move the image up the screen.

The positioning of a player or missile horizontally is always by colour clocks. A colour clock is the smallest width which can be displayed in a single colour and is equal to the width of two pixels in the highest graphics resolution, eg, graphics mode 8 from BASIC. We saw last time that the position of each player or missile was controlled by a seperate register (HPOSP0-3and HPOSM0-3), each increment or decrement in value thus causes the image to move by a colour clock; note that there is no corresponding horizontal delay register for finer movement. Whereas the positioning cannot be adjusted, the width of a player or missile can be adjusted by use of an appropriate size register . The registers SIZEP0-3 use bits 0 and 1 to determine the size of each player, the other six bits are ignored. A value of 0 or 2 will produce the normal size for a player where each bit is one colour clock wide, ie, 16 pixels in the highest resolution mode, a value of 1 doubles this width and a value of 4 doubles it again to four times the original width. The register SIZEM controls the width for each missile in exactly the same way with bits 10 and 1 referring to missile 0 and so on. Note though that horizontal positioning is still at each colour clock no matter what width has been selected.

What hasn't been mentioned so far is that the player table itself

CRACKING THE CODE continued

cannot reside anywhere in memory but must be aligned to certain boundaries. We shall see later that similar restrictions are placed on the positioning of information in memory, such as the display list, this was done for a simple reason. It simplified the design of ANTIC. Last time it was mentioned that PMBASE was the register which informed ANTIC of the location of the player/missile table. Internally ANTIC uses a 16 bit register to address the player/missile table, as the table is 2K in size in single line resolution mode ANTIC uses the bottom 11 bits of this register as an index into the table which leaves the top five bits to locate the table, ie, the table must be on a 2K byte boundary. Similarly, in double line resolution mode, as the table is 1K the top six bits are used to locate it, ie, the table must be placed on a 1K byte boundary. The top five or six bytes of the PMBASE register are thus used to load the internal register, depending on the mode. Note that the other bits in PMBASE will have no effect on the positioning of the player table so you must remember to position your table to the appropriate 1K or 2K byte boundary. Of course you can have more than one table in memory and switch between them at will.

The colours of the four players/missiles are determined by the contents of the four registers COLPM0-3. As the names of the registers suggest the colour value controls both a player and its associated missile. The actual colour selected is determined by the top four bits of a colour register, the next three bits determine the intensity of the colour displayed. Note that the last significant bit has no effect on either the colour or the intensity of a player or missile.

The more interesting aspects of player/missile graphics are their priorities and 'collision' detection. The register PRIOR shown in Figure 2 controls how player/missiles are displayed.

The two top bits of this register determines which of the four modes GTIA works in: these will be described another time but for now it is sufficient to say that both bits set to zero is the 'normal' mode with the other three used in the display of graphic modes 9, 10 & 11 from BASIC. The rest of the bits are for player/missile control.

Bit 5, if set to 1, enables a third colour to be generated in the display of two players. The third colour is generated when the data for player 0 & 1 overlap, in this case the colour for the overlap region is determined by taking the colour register values for those players and ORing them together. The same process can independently occur for players 2 & 3 if they overlap, thus by careful selection of colour values it is possible to get 6 colours from the four players. Bit 4, if set to 1, sets the colour of the four missiles to that of COLPF0-3. The idea here is that if the four missiles are positioned side by side they form a 'fifth player' which has a colour independant of the other four players. The last four bits are used to determine the priority of players over each other and the background colours, thus enabling the effect of passing objects over one another. The exact operation of these priorities will probably be described next time.

There are sixteen registers in GTIA for detecting 'collisions' of players and missiles with the background or 'playfield'. A collision simply implies that the display of a player or missile is overlapping with the display of a playfield colour. The registers P0-3PF show the collision of players 0 to 3 with playfield colours respectively, similiary M0-3PF show the collision of missiles 0 to 3 with the playfield colours. Bits 0 to 3 in each register, if set to 1, indicate a collision with playfield colour 0 to 3 respectively. As an example, if bit 2 was set in P3PF it would indicate a collision (overlap) between player 3 and playfield colour 2.

Registers M0-3PL indicate collisions between missiles and players and P0-3PL indicates collisions between players and players. Bits 0 to 3 now refer to players 0 to 3 respectively, but note that in the player-to-player registers that a player does not collide with itself! That is bit 0 of P0PL will

CRACKING THE CODE continued

always be zero as will bit 1 of P1PL, etc.

If anything is written to the register HITCLR then all the bits in the collision registers will be set to zero, this is necessary because collisions are not cleared automatically. This means that the safest way of using the collision registers is to always write to HITCLR just before you read them otherwise collisions will get ORed together. Of course you could always compute for yourself if objects overlap but the hardware is much quicker.

THE REST OF THE DISPLAY

The display is bult up, as mentioned before, of the combination of ANTIC's display and GTIA's colour and player/missiles. Figure 3 shows the four sections of memory which are accessed by ANTIC's DMA to create the display information which is passed onto GTIA. The 'switches' shown correspond to bits in an ANTIC or GTIA register which controls whether data is fetched or not. It can be seen that for player/missiles to be displayed two switches must be closed:the first switch allows ANTIC to actually fetch the data from memory and the second allows the data to be placed in GTIA's registers. Bits 2 & 3 of DMACTL control the fetch of missile and player DMA respectively and bits 0 & 1 of GRACTL control the display of the missile and player DMA data respectively. Bit 4 of DMACTL selects whether data is fetched for single or double line resolution when player of missile DMA is enabled.

Bit 2 of GRACTL controls the 'latching' of the trigger values for the joysticks. This has nothing to do with the display but as the bit was put in this register it will now be explained! Normally bit 2 of GRACTL will be zero, this means that the four trigger values from the joysticks will be directly readable from TRIG0-3 with bit 0 of each indicating the button is pressed if its value is zero and that the button is up if the value is 1. However, when bit 2 of GRACTL is set to 1 and a button is pressed the value in the appropriate trigger register will go to zero and stay there even if the button is then released, ie, it has been latched. The value can be reset again to one by writing 0 to bit 2 of GRACTL and then setting it back to 1 if you still want values latched. I should point out at this stage that on machines with only two joysticks the other two trigger lines (TRIG2 & TRIG3) are used for other purposes.

Coming back to the display, ANTIC reads a 'program' known as the display list to tell it how to build up the display (playfield). Bit 5 of DMACTL must be set to 1 for this operation to occur. Bits 0 & 1 of DMACTL determines how ANTIC, as instructed by the display list, fetches actual display data. If both bits are zero then no display is generated, the other setting create a display of three different widths. The usual setting of bits 0 & 1 is 1 & 0 respectively producing a screen of 160 colour clocks.

Before we move on to look at the display list it is worth remembering that all DMA operations by ANTIC stops the 6502 from processing periodically. Thus if a player DMA is enabled but the player is not wanted then the processor is being slowed down unnecessarily; so it is usually best to turn off any DMA you are not using. It is rare that you will want to turn the display list or display data DMA off because it will result in a blank screen. However, when display DMA is on, the processor will run faster when ANTIC has to fetch less data, so lower resolution screens will mean faster program execution; much faster if there is no screen at all-but I dont think it will catch on for fast games!

Listing 1 is a simple program which sets up a new display list for ANTIC to use. If listing 2 is typed in and run it loads in the code, the program is run by typing:

```
X=USR(1536)
```

This produces a screen showing one of each of ANTIC's mode lines then one blank line and all the mode lines again in reverse. The program then runs in a loop writing random data over the screen until a control key is pressed.

CRACKING THE CODE continued

Note that when it stops running you can still type commands to BASIC - you just will not see them because you are looking at a new display.

Looking at Listing 1, the first thing the program does is save the address of DLIST into SDLSTL and SDLSTH. These are the operating system shadows of the hardware registers DLISTL and DLISTH. Once the hardware registers have been updated with this new address, ie, after the next vertical blank, then ANTIC will start using the display list defined from line 390 to 490. Table 1 shows all the instructions which can be used in a display list. The first type of instruction is the 'display data': this tells ANTIC to display a line of data in one of the 14 modes available. Modes 2 to 7 are character mapped while modes 8 to $F are bit mapped. The table shows the number of characters or pixels a line occupies assuming a standard width screen of 160 colour clocks, ie, DMACTL bits 1 & 0 set to 1 & 0 respectively. It also shows how many colours can be selected from that mode and how many scan lines high the line will be.

With each mode line any combination of the top four bits can be set to achieve scrolling, interrupts or to load the memory scan-counter. This latter flag is essential to tell ANTIC where to find its display data which will fill each subsequent mode line, Line 390 of Listing 1 defines a display instruction for mode 2 with its Load Memory Scan-counter (LMS) flag set. This causes ANTIC to load its scan-counter with the following two bytes. These are defined on line 400 with the WORD directive which takes the address DISPLAY and stores it in low/high byte order. These first three bytes of the display list will cause ANTIC to display a mode 2 line using data from the address DISPLAY. The next two lines define display instructions for the modes from 3 to $F with no flags set. This will make ANTIC display these lines using data following on from where the first line finished, this is because the scan-counter is incremented after each byte of display data is fetched and unless it is re-loaded with another LMS flag the display data will remain contiguous. Line 430 defines another display instruction which simply produces a single blank scan line on the screen. This second type of instruction can in fact produce anything from 1 to 8 blank lines depending on a three bit count value as shown in table 1. Although this type of instruction will not cause any data to be fetched, ie, the scan-counter will not be changed, the interrupt flag can still be set-in fact any ANTIC instruction can cause a so - called display list interrupt if it has bit 7 set as will be described next time.

Lines 440 to 470 defines all the mode lines again but in reverse order. Note that the LMS flag has been set on line 440 so the scan-counter will be re-loaded with the address of DISPLAY. This means that these mode lines will look at exactly the same data as the first 14 except it will be displayed in a different mode. It is common only to have one LMS in a display list but there is nothing to stop you re-loading the scan-counter on every line and thus make the screen data non-contiguous.

After ANTIC has produced a single frame using this data it will then execute the instruction on line 480. This is the third type of instruction shown in Table 1 and causes ANTIC to re-load its display list pointer. In this example the address of the start of the display list follows this instruction so ANTIC goes back to start displaying it all over again. Before ANTIC starts re-displaying the information it waits for the next vertical blank to occur because the 'WVB' flag had been set. This has the effect of synchronising each frame so as to produce a stable display.

As has already been explained the program goes around in a loop saving random data at a random position in the 512 bytes starting at DISPLAY thus causing the displayed data to keep changing until a consol key is pressed.

Next time we will look at display lists in more detail and discuss scrolling and interrupts among other things.

CRACKING THE CODE continued

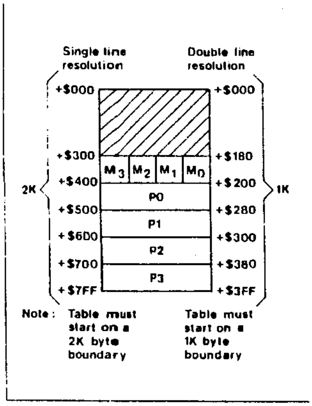


Figure 1. Player/Missile Table.

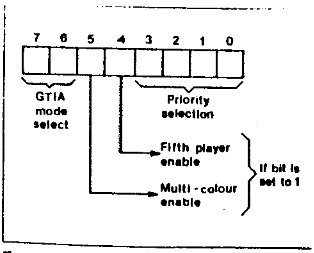


Figure 2. PRIOR Register.

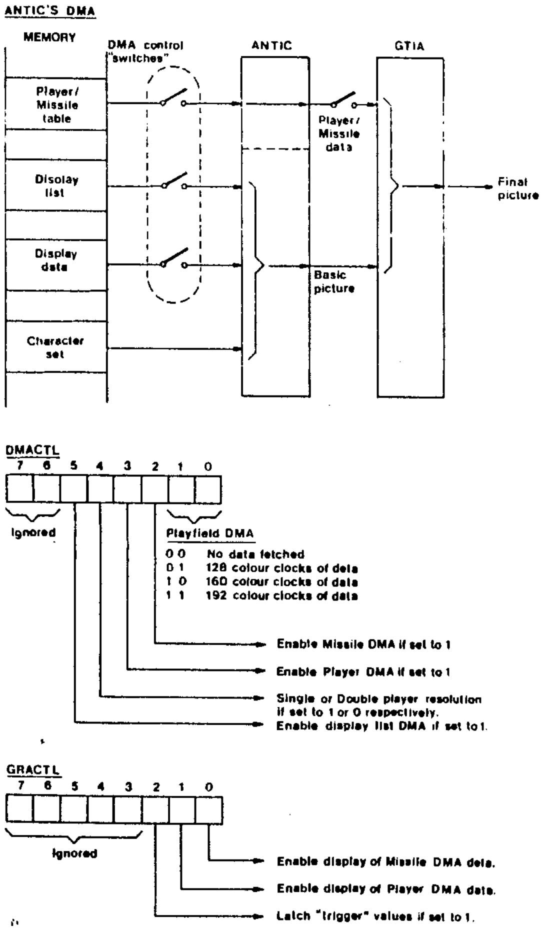
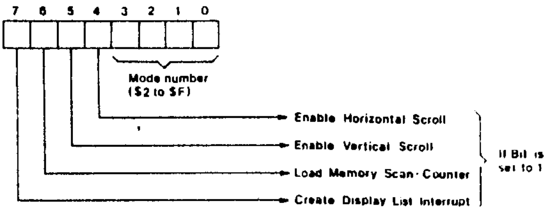


Figure 3. ANTIC's DMA.

CRACKING THE CODE continued

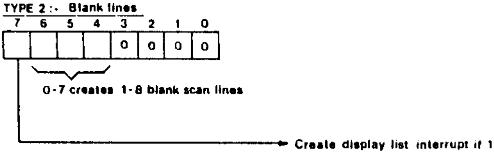
TYPE 1 :- Display data



Mode No. (hex)	No. of Characters *	No. of Colours	No. of Scan Lines
2	40	2†	8
3	40	2†	10
4	40	4	8
5	40	4	16
6	20	5	8
7	20	5	16
	No. of Pixels *		
8	40	4	8
9	80	2	4
A	80	4	4
B	160	2	2
C	160	2	1
D	160	4	2
E	160	4	1
F	320	2†	1

* = Assumes "standard" width screen of 160 colour clocks.
† = Actually one colour with two luminances.

TYPE 2 :- Blank lines



TYPE 3 :- Jump

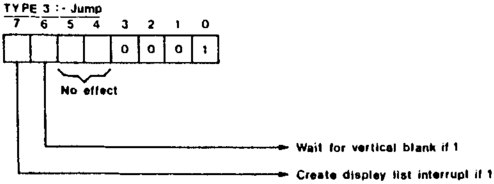


Table 1. ANTIC Display List Instructions.

CRACKING THE CODE continued

```
0100 ;Hardware register equate...
0110 CONSOL  =       $D01F   ;Consol keys.
0120 RANDOM  =       $D20A   ;Random number.
0130 ;Operating system shadows...
0140 SDLSTL  =       $0230   ;Display list pointer low.
0150 SDLSTH  =       $0231   ;Display list pointer high.
0160 ;Display list instructions...
0170 JMP     =       $01     ;Jump instruction.
0180 WVB     =       $40     ;Wait for vertical blank flag.
0190 B1      =       $00     ;Blank 1 line instruction.
0200 LMS     =       $40     ;Load memory scan flag.
0210 ;Program equate...
0220 DISPLAY =       $4000   ;Start of display memory.
0230         *=      $0600   ;Another page six program...
0240         PLA             ;Clean stack.
0250         LDA     #DLIST&$FF ;Low address of new
0260         STA     SDLSTL  ; display list and save it.
0270         LDA     #DLIST/256 ;High address of new
0280         STA     SDLSTH  ; display list and save it.
0290 LOOP    LDX     RANDOM  ;Random index.
0300         LDA     RANDOM  ;Random number.
0310         STA     DISPLAY,X ;Save in display.
0320         LDA     RANDOM  ;Another random number.
0330         STA     DISPLAY+256,X ;Save in display.
0340         LDA     CONSOL  ;Consol status.
0350         CMP     #7      ;All up?
0360         BEQ     LOOP    ;Yes - continue.
0370         RTS             ;Else back to BASIC.
0380 ;Display list data...
0390 DLIST   .BYTE   2+LMS   ;Mode 2 & load counter.
0400         .WORD   DISPLAY ;Address of display.
0410         .BYTE   3,4,5,6,7,8,9 ;Modes 3 to 9.
0420         .BYTE   $A,$B,$C,$D,$E,$F ;Modes A to F.
0430         .BYTE   B1      ;Blank 1 line.
0440         .BYTE   $F+LMS  ;Mode F & load counter.
0450         .WORD   DISPLAY ;Address of display.
0460         .BYTE   $E,$D,$C,$B,$A ;Modes E to A.
0470         .BYTE   9,8,7,6,5,4,3,2 ;Modes 9 to 2.
0480         .BYTE   JMP+WVB ;Jump on next vertical blank.
0490         .WORD   DLIST   ;Address of start.
```

Listing 1.

```
QZ 10 DIM HEX$(16)
CV 20 LINE=10000:TRAP 100:J=0:START=1536
VA 30 READ HEX$,CHKSUM:SUM=0
AA 40 FOR I=1 TO 15 STEP 2
ZG 50 D1=ASC(HEX$(I,I))-48:D2=ASC(HEX$(I+
   1,I+1))-48
KT 60 NUM=((D1-7*(D1>16))*16+(D2-7*(D2>16
   )))
LW 70 SUM=SUM+NUM:POKE START+J,NUM:J=J+1:
   NEXT I
LY 80 IF SUM=CHKSUM THEN LINE=LINE+10:GOT
   O 30
IN 90 ? "Checksum error on this line:"
VO 95 LIST LINE:END
YS 100 PRINT "Data in memory."
NK 10000 DATA 68A9228D3002A906,673
TN 10010 DATA 8D3102AE0AD2AD0A,769
JE 10020 DATA D29D0040AD0AD29D,981
UO 10030 DATA 0041AD1FD0C907F0,925
YC 10040 DATA EA60420040030405,472
OK 10050 DATA 060708090A0B0C0D,76
AD 10060 DATA 0E0F004F00400E0D,199
PO 10070 DATA 0C0B0A0908070605,68
JS 10080 DATA 040302412206,114
```

Listing 2.

DO I NEED A BLACK BOX?

by Max Gerum

Have you ever thought about how nice it would be to connect to your 8-bit a hard disk or even a 3 1/2 inch drive? You hear such a lot about how fast a hard disk runs and how much more can be stored on a 3 1/2 inch drive.

I think the speed of your drives is crucial when you are doing a lot of work on your computer. I don't like waiting about when loading files, I like to access them in seconds not minutes. Is that possible on the 8-bit I hear you say, yes of course it is with a RAMdisk. AH! YES, what if you want to retrieve a file from the disks. Yes there is a problem, the standard 1050 drives are very slow. If you have an enhanced drive with the US doubler fitted it is a little faster but that doesn't load a long file in seconds, not like the RAMdisk, that's where the hard disk comes in.

Well, I am in the position to tell you about the hard disk drive. If you have a RAMdisk on your computer you know how fast you can load a file, but have you ever checked the speed? NO! My XE is fitted with a 1 Meg memory and I use the RAMdisk all the time. When I load my TextPro word processor, which is a long program, from the RAMdisk it takes just 3 seconds. I have also checked the speed of my hard disk by loading TextPro from it and it takes 3 seconds and a blink of the eye lid, longer. Checking my 1050 drive fitted with the US doubler, formatted and saved in ultra speed, it takes TextPro 1 minute and 45 seconds to load.

Now what about the headline, it says, 'Do I need a Black Box?' I for one say yes,... if you want to enhance the speed of your 8-bit. I've got the Black Box and Floppy Board fitted and that's what this article is about, the Black Box and Floppy Board. The Black Box is a parallel interface for the hard disk and printer, it also provides a RS-232 port for a modem. The R driver is built-in to the BB and doesn't use any user memory.

I will refer to the Black Box throughout this article as 'BB' and to the Floppy Board as 'FB'.

Now the Floppy Board is a parallel interface to run any generic 5 1/4 or 3 1/2 drives at parallel bus speed. Most IBM or ST drives can be connected to your 8-bit Atari. Just think, you can connect up to 4 PBI drives to the FB. You can transfer all your Atari programmes to these drives and run them from it in parallel bus speed. Another good feature the Floppy Board has, it lets you convert, with the utility provided, any IBM or ST files to the 8-bit format and vice versa.

As I said in the paragraph above with the floppy board fitted all your disk drives can be run at parallel bus speed and that includes your enhanced 1050 drives. But you must first initialize the drives in the ultra speed format. This can be done any time and from anywhere in any program and you can return to the same place in the program without any loss of text. This feature is available from the main menu of the BB, I will say a little more about this function later in this article, when I screen dump the config menu.

You are probably wondering if you can run all your Atari programmes and games with these PBI drives. Yes, of course you can, but you can only use a low density PBI drive and you must switch from ultra speed to normal speed. I have tried loading programmes and games in ultra speed and those I tried would not load. The programmes and games that have been saved on the 1050 drives are all in a slow format. To run in ultra speed the disks must first be initialized in ultra speed format and the programmes saved in that format to disk. How to switch the drives to normal speed will be explained when I show you a printout of the config menu.

Here is my setup it consists of: one 3 1/2 low density double sided drive that gives me 720K and 2880 sectors by 80 tracks, this is my drive 5.

DO I NEED A BLACK BOX? continued

One 5 1/4 low density double sided at 360K with 1440 sectors and 40 tracks, this is my drive 7. I also have a 5 1/4 HI density double sided drive at 1.2M with 4640 sectors and 80 tracks, this is my drive 9 and I still have my two trusted Atari 1050 drives, plus a 40 Meg hard disk, which is of course my main drive, and as I said above everything loads in high speed. Most programmes are saved to the hard disk, but I also keep a back up just in case my hard disk takes some funny turns.

Before I tell you more about the BB, I would like to say a word or two on how to connect the BB to the cumputer. Connect the BB into the Parallel Bus Interface (PBI) port of the 800XL with the short ribbon connector attached to the BB, just plug the end of that cable into the PBI port.

When connecting the BB to a XE machine, you disconnect this short cable from the BB. I used a small screwdriver and eased the black connector from the grey base very carefully till it was slack enough to pull it off. The BB's bottom edge has been designed to fit into the Cartridge and ECI port. A vertical Cartridge port has been provide on the BB in place of the now occupied horizontal cartridge port. The majority of cartridges will now plug into the port, except the Atari brand with the spring loaded cases. By inserting a small screwdriver you can retract the bottom part of the case.

What I want to do now is to give a detailed description of the Black Box and showing you screen dumps of the menus. By doing it this way, I believe will give you, especially those readers who don't know yet what a Black Box is, a better insight of this Atari classic add-on.

Let me start with the four switches mounted on top of the Black Box. Two are push button switches and two toggle switches. When you push the left button switch you enter the menus of the BB. From this menu you may edit the system configuration or use the 6502 monitor program, enter the Taskmaster editor and sector copier or use the formatting options. This menu can be invoked from most anywhere in any program. The only time you should not enter the menu is when reading or writing to a disk drive. This is the first menu you enter when you've press the button, it is the main menu. To exit press ESCape.

FIGURE 1 MAIN MENU.

```
      The Black Box!   Ver. 2.11
(C) 1993 By CSS  •  By: Robert Puff

            Main Menu:

   [ ]   Drive Configuration
   [ ]   Port Statuses
   [ ]   6502 Monitor
   [ ]   Task Master
   [ ]   Floppy Formatter
   [ESC] Return to program

   Select >
```

Displayed are all the functions available. When you press the 'A' you enter the Drive Configuration menu, from there you can enter other sub-menus. I will explain this menu a little later and I will also show you a print of it.

When pressing 'B' you enter the Port Statuses menu, the screen print 'FIGURE 2' shows you exactly what options there are. I don't think there is any need for me to explain the functions, they are more or less self explanatory.

FIGURE 2 PORT STATUSES, Etc

```
      Port Statuses, Etc

      I/O Sound         :Off
      RS232 Port        :Off
      Printer Port      :All
      P: Linefeeds      :On
      Spooler Stat      :Off
 HD Part. Map Start Sec:2

   ↑↓-Move Cursor    ESC-Exit
   RETURN-Change     S-Save
```

DO I NEED A BLACK BOX? continued

By pressing 'C' you enter the 6502 Monitor this is very handy for the machine language programmers. The MAC/65 users will feel at home with the Monitor's use. I am unable to tell you anything about the Monitor, I am not a machine programmer and I have never used MAC/65.

The build-in Task Master sector editor is a very useful feature. By just pressing 'D' you enter the editor to edit any program or use Task Master as a sector copier, or disk copier. When copying disks it displays the density of the source disk automatically and you have the option to format the destination disk before writing to it.

The last function in this menu is the Floppy Disk Formatter, when you press 'E' you enter the formatter menu it displays two DOS options: MyDOS and SpartaDOS. MyDOS is the default DOS, SpartaDOS users press 'S' and Return. The next prompt is what drive to format, enter the number of the drive and Return, next you see all the densities available to you, Single, Enhanced, High, Double and QUAD density. You will also be asked if you want the disk to be formatted in ultra speed or normal speed. This formatter is very handy when trying to save a file and forgot to format a disk. When the disk or disks have been formatted you can return to whatever you were doing without loosing anything by just pressing the ESCape key.

FIGURE 3 FORMAT MENU

```
Floppy Disk Formatter

DOS Type: [M]YDOS or [S]partaDOS: M

Drive to Format: 3

[S]ingle (SSSD)       [D]ouble (SSDD)
[E]nhanced (SSED)     [Q]uad (DSDD)
[H]igh (DSHD)         Select Density: D

Type [Y] for high speed format,
[SHIFT] [Y] for low speed format,
or [B] to rebuild Directory: █
```

Now lets return to the option 'A', here is the screen dump of that menu.

FIGURE 4 DRIVE CONFIGURATION PAGE

```
Drive Configuration Page

D:    Partition Ctl Start              Pro
#     Name:      ID #  Sector   Length  Dns
--------------------------------------------
1 C1:            1A A  17       720     Y S
2 Floppy Drv      # 1  US:Y     ------- - -
3 Floppy Drv      # 2  US:Y     ------- - -
4 HD 3           1C A  1457     36000   Y D
5 PBI Floppy     -> 0  US:Y     ------- - -
6 HD 9           1F A  77573    4522    Y D
7 PBI Floppy     -> 1  US:Y     ------- - -
8 HD 5           1E A  37457    40115   Y D
9 PBI Floppy     -> 2  US:Y     ------- - -

↑↓←→-Move Cursor       RETURN-Change
E-Exchange Drive       S-Save Config
W-Write Partition      P-Part'n list
C-Ctl List   F-FB Parms   ESC-Exit
```

This menu is showing you my Drive Configuration Page. This is the main drive configuration, where each of the nine drives, D1: to D9:, as the computer sees them, are defined. From this menu you enter the two sub-menus, the Controller List and the Partition List.

First we will discuss the drive config menu. The first vertical field is the partition name, if the drive is a hard disk it is given the ID as HD and the name is entered into the partition list. If the drive is defined as a floppy drive, connected to the computer's SIO port, then the name should be 'Floppy Drv'. If however, the drive is connected to the floppy board, then the name should be given as 'PBI Floppy'. It is easy to change the drive names, when the partition name field is highlighted press the Return and the names will change.

Next is the controller number field, this identifies the hard disk by letters, so as not to be confused with floppy disk numbers. The first hard disk would therefore be defined as the 'A' entry of the controller list. This field also indicates the drive number if the logical drive is a floppy. An example is on the menu above, the second line shows that drive 2 is set as floppy drive #1.

DO I NEED A BLACK BOX? continued

The fourth field is the starting sector number. Sector 0 on a hard disk is reserved for the Black Box use and all the rest are free for partitioning. If you are using 512 byte sectors the starting sector number must be an odd number. If this field is occupied by a floppy drive, it will display 'US:' and a Y or N. You highlight this field when you want to slow the floppy drives to standard speed.

As I mentioned above the BB has ultra speed SIO routines for modified 1050 drives, Happy 810s, and XF-551 drives. There is another way to switch the ultra speed to normal when you run an incompatible program, press SELECT and OPTION together while the drive is being accessed. To re-enable the high speed, you can either enter the menu and set the field to 'Y', or press START and OPTION together while the disk is being accessed.

The length field is the number of sectors the partitioned drive contains. These last three sections are not applicable to the floppy drives. The minimum sector length is 720 sectors, this is to prevent problems with certain programmes.

The next field is the Write Protect flag, by setting this to a 'Y' will protect this particular hard disk.

The last field is the density selection, all partitions larger than 720 sectors should use double density. The Black Box's feature is the ability to copy boot programmes to 720 sector hard disk partition. When setting this field to single density, the partition will then act just like a floppy drive, only much faster. To set the flag from single to double density or vice versa, highlight this field with the cursor and press return.

You can exchange any logical drive number with any other drive you want to swap, with the 'E' command. Simply place the cursor on one of the drives, press E, then type the number of the drive with which you want to exchange.

This is handy to exchange drive 1 with a drive you want to use to boot a program.

Pressing C will take us to the Controller List Page, here is the menu.

FIGURE 5 CONTROLLER LIST PAGE.

Controller List Page

ID	Type	ID,Lun	Heads	Cyls	Step	SSize
A	SCSI	0,0	04	302	07	512
B	SCSI	0,1	00	0	00	256
C	SCSI	1,0	00	0	00	256
D	SCSI	0,0	00	0	00	512
E	SCSI	2,0	00	0	00	256
F	SCSI	2,1	00	0	00	256
G	SCSI	3,0	00	0	00	256
H	SCSI	3,1	00	0	00	256

↑↓←→-Move Cursor RETURN-Change
D-Drive Config S-Save Config
P-Partition Names ESC-Exit

The controller list contains one entry per physical hard disk. They are identified by letters instead of numbers. The first field is the interface type, most controllers are the SCSI variety. The second field contains two values, the Bus ID number and the Logical Unit Number (LUN). The Bus ID number is the ID of the controller, the first controller should always be 0. The Logical Unit Number is the ID of the physical hard disk. Most controllers can handle two drives, number 0 and 1. The Black Box numbers them 0-3, always use the first ID for the first drive.

The Heads and Cylinders are characteristics about your hard disk, always consult the data you have on your hard disk. This data is important, for it tells the BB the capacity of your drives. The Step Rate field is drive dependent, most drives can handle what's called buffered seeks. To use buffered seeks, use a value of 7.

The last field is the Sector Size, you can toggle between 256 and 512 bytes. The 512 byte sectors can be used with the BB. The Atari 8-bit DOSes cannot handle anything greater than 256 byte

DO I NEED A BLACK BOX? continued

sectors, the BB's 512 byte sector mode works by splitting each 512 byte sector into 256 byte sectors. The advantage in using larger sector size is you will always get more storage.

To enter the Partition List Page, press P in the configuration menu.

FIGURE 6 PARTITION LIST PAGE.

```
                 Partition List
                     Page 1
1A  HD 1          2A                    3A
1B  HD 2          2B                    3B
1C  HD 3          2C                    3C
1D  HD 4          2D                    3D
1E  HD 5          2E                    3E
1F  HD 9          2F                    3F
1G  HD 6          2G                    3G
1H  HD 7          2H                    3H
1I  HD 8          2I                    3I
1J                2J                    3J
1K                2K                    3K
1L                2L                    3L
1M                2M                    3M
1N                2N                    3N
1O                2O                    3O
1P                2P                    3P

  N-Next Page   D-Delete   ESC-Exit
  ←→↑↓  K-Kill list   RETURN-Assign
```

The Partition List Page allows you to manage several drive configurations, as previously explained, a partition is a section of a hard disk. The Partition list allows you to have them all on call, so that they may be used at any time, quicly.

Whenever you want to exchange a logical drive with one from the Partition list, enter the partition list first, highlight the desired disk, then press Return. You will then return to the main drive configuration menu and prompted for a drive number. When pressing a valid drive number, the drive you selected from the partition list will replace what was in that drives config.

The last menu is the Floppy Board Drive Parameters where you configure the PBI drives. You enter this menu from the configuration page by pressing 'F'. This menu shows you how my PBI drives have been set up. The ID numbers, you see in the menu, refer to the ID jumper settings on your drives. You must also set the step rate for each drive, when you look at the menu below you will notice that the step is set to 6.

Not all 3 1/2 inch drives run with a step rate of 6, sometimes they only use a rate of 3, the only way to find that out is by trial and error. To change the parameters in a field highlight the field and press Return.

FIGURE 7 THE FLOPPY BOARD DRIVE PARAMETERS.

```
      Floppy Board Drive Parameters

ID  Drive Size/Sides/Dns     Step   Mode
-----------------------------------------
 0  720K 3.5" 80T 2S Low       6     XF
 1  360K 5.25 40T 2S Low       6     XF
 2  1.2M 5.25 80T 2S Hi        6     XF
 3  ---- Undefined! ----       3     XF

  ←→↑↓-Move Cursor     RETURN-Change
  D-Drive Config       P-Part'n List
  S-Save Config        ESC-Exit
```

Let me now explain the utility programmes you get with the Black Box and Floppy Board. These programmes are all .COM files, all are run with the 'L' option from DOS.

On the disk there is the MYDOS version 4.50, this DOS can handle hard disk drives up to 16 Megabytes. CSS is working on a MYDOS version to handle up to 48 Megabytes, they are hoping to release it soon.

VTOCFIX.COM is a MYDOS utility for fixing any file or files gone bad on you hard drive. The document file is also on the disk.

HDFMT.COM this program physically formats the hard drive. You must use this program first before the partitioning of the hard drive can be performed.

FMTDIR.COM use this program to partition your hard drive into smaller drives so that DOS can use them easier. It also maps out bad sectors that weren't mapped out at the controller level.

DO I NEED A BB? continued

USPRAM9.COM is for those who use the Ultra Speed plus Operating System by CSS, to set the RAMdisk to number 9 drive. The US+ defaults the RAMdisk to be number 4 drive.

PARK.COM load this program before you put the hard drive to bed. It will position the heads of the hard drive to the inner cylinder. This step should be taken prior to switching off your hard drive, if your drive doesn't have an auto-park feature. It also reports the last sector available on the drive.

I hope this article is giving you a little insight of what can be achieved with the Atari 8-bit when using the Black Box and Floppy Board. Computer Software Services have really worked hard to keep our 8-bit alive, there are many more add-ons available and the advert can be viewed on the inside cover of this issue.

==

DESKTOP PUBLISHING ON YOUR ATARI 8-BIT.

Desktop publishing programs for 8-bit Atari computers come in several categories. Some software allow you to print cards, signs, awards, and other types of forms, with semi-custom results. These publisher programs tend to be very easy to use, but are limited in their flexibility.

The page-layout software category lets you put text and clip-art on the page using custom fonts and pictures. Such programs offer more flexibility, but tend to be more difficult to use and somewhat unwieldy.

The "Full" publishing program category can include text and graphics in various formats. These are not quite as flexible as the page-layout programs, but are easier to use overall. There are also a whole host of utility programs that convert graphics from one format to another.

DESKTOP continued

PRINT SHOP

One of the best-selling programs of all time is Broderbund's Print Shop. It was successful not only because it addressed a market that had not been dealt with before, but provided a product that everyone needed and could use. The user interface was so simple that the excellent manual really wasn't necessary.

Print Shop starts out with a main menu, from which you can choose to print a card, sign, banner or letterhead. Once you make your selection, the program leads you step-by-step through the creation process, adding borders, graphics and text to whatever you are creating. Each item (border, graphics or type style) is selected from a menu, and samples of what you'll be getting are shown right on the screen.

The 60 graphic icons are available in three sizes, and 8 different fonts are included. These fonts can be further customized by using three modifiers (solid, outline or 3-D drop shadows). There are also nine border designs. The graphics can be added to a page only in certain positions, and only a single graphic design may be used on a page. The text is added to your work on a line-by-line basis, and each line can have a different size of text, although all lines must be in the same font.

There is also a crude editor for editing and saving graphics. You cannot edit the fonts or borders, nor can you save the final design. A Kaleidoscope function lets you freeze a design that you like, then add text to it to make a sign.

PRINT SHOP COMPANION

Also from Broderbund, Print Shop Companion comes with 50 additional border styles, 20 new graphics and 12 new fonts, but it features a much improved graphics editor containing most of the features of classic drawing programs. You can draw shapes, scroll your creation, undo, and fill.

DESKTOP PUBLISHING continued

Also included are mirror moves, and inserting or deleting columns. The border editor includes most of the same functions as the graphics editor, allowing you to make your own borders.

PRINT SHOP EXTRAS

The popularity of Print Shop spawned quite a few disks of Print Shop graphics, available from a few sources including the TWAUG PD library which at present has 25 double sided disks and will be adding possibly another 2 disks in July.

NO FRILLS UTILITY DISK

This excellent disk of utilities allows you to catalogue your Print Shop icons, borders and fonts. You can also dump them to printer so that you have a good hard copy for quick reference. There is also a very good label printer on the disk which uses Print Shop icons, but fonts must be in Atari format.

HI-TECH CREATIONS

Another product along the same lines as Print Shop Hi-tech Creation's Print Power, Print Power has 7 fonts, 60 graphics and 20 borders, and can be used to create cards, signs, stationary and banners. Except for the banners, all of these can be turned 90 degrees when printed.

Banners can be an incredible 42 pages long and can include muliple lines of text. The graphics can be printed in 5 sizes, but, as with Print Shop, only one graphics icon can be put on a page. However, these icons freely positioned on the page, unlike Print Shop's fixed positioning. There is no graphics editor, so you cannot customize an icon or create your own.

Banners can use up to 11 different text sizes, other items can use 3. Special text effects include bold, italics, outline, shadow, 3-D and shadow italics. These special effects can be varied by line of text, and up to 4 different fonts can be used on a page.

You can even arrange it so that text shows through background graphics if you like. When designing the card, the screen display is less clear and detailed than Print Shop's. Further, you must make all your choices from text on the screen, referring to a seperate reference card to see what each graphic or border actually looks like. But then, Print Power doesn't cost as much as Print Shop.

Awardware lets you choose from 20 different borders, 5 different fonts and 25 different graphics to build award printouts. The last template you created is always easily available, or you can load one of the many templates included with the program. There are nearly 100 unique types of award templates.

THE CONVERTER

The Converter from No Frills Software is a remarkable utility that adds considerable functionality Print Power, Awardware and even has some tricks to enhance Newsroom. The converter lets you convert graphics from one format to another. It can load Print Shop icons, Awardware graphics and seals and Print Power graphics. It can save Awardware graphics, Awardware seals, Print Power graphics or Newsroom clip art.

Note that one thing the Converter does NOT do is save icons in the Print Shop format. You can load any of the readily available Print Shop icons, however, and save them as Print Power graphics or Newsroom clip art.

Once a graphic is loaded, another powerful feature comes into play. The Converter's graphic editor. This editor can modify any graphic it can load. As a result, you can use the Converter to edit your Print Power graphics, filling in for the missing Print Power graphic editor. You can create new graphics and seals for Awardware, which also lacks an editor.

The Converter is "smart" enough to determine the format of a disk it's reading, and adjust to match, even with

DESKTOP PUBLISHING continued

the unusual Print Shop format. The Converter can even format disks in any format it can save in.

PAGE DESIGNER

Xlent Software produces two 8-bit products designed to lay out pages suitable for signs and newsletters. Page Designer splits a page into top and bottom halves. Each half fills an entire screen, so that you must switch between two screens to lay out an entire page. This display method increases the resolution of the page, letting you do some pretty fine detail work.

Page designer lets you load a graphics 7.5 or graphics 8 picture either to the top or the bottom of the page. Compacted KoalaPad pictures won't work directly, but there is an option from the main menu to uncompact such pictures, so you do have access to them. A very simple graphics editor, the sketchpad, lets you generate designs, draw shapes, plot points, or modify pictures loaded from disk. You select your drawing tools and draw with a joystick.

Page designer also lets you add text to the page, in either 40 or 80 column mode. Text must be laid on top of any graphic, since loading the graphic wipes out any text underneath. Page designer is unable to load text from disk, instead you must type it in directly. The printouts are very high quality, and the results can be saved to disk.

TYPESETTER

Typesetter is Xlent's advanced package. It also starts with the concept of the blank page, to which you can add graphics and text. Typesetter allows very light resolution (704*624 on a 48K machine, 768*640 on a 130XE), taking full advantage of the extra memory in 130XEs. Typesetter lets you edit a page with much higher resolution than the Atari screen by turning the screen to a scrolling window of a much larger page. The main screen is kept resident in memory at all times.

You can add text directly to this screen. Typesetter supports 32 sizes of text, and can use any standard 8-sector font. You can vary not only height but the width of a character as well. You can rotate characters in 90 degree increments and type in any direction (useful when using rotated characters). Special "sliced" characters and italics are also possible in the text editor.

You add text simply by typing it in. Again, you cannot load text from disk. Editing your text can be very tedious, especially if you have to add a new line in the middle of the page. There's no way to insert a new line, so you end up retyping anything below the new line you wanted to add. (This is also true of Page Designer.)

Typesetter contains a graphic editor. To keep as much memory available as possible for the high-resolution page, you have to load this editor seperately, making it a somewhat tedious process to switch between the main text screen and the graphic editor.

You can design your own icons in the graphic editor, save the icon to disk or "stamp" it onto the main screen. The editor has tools for drawing shapes, doing six pattern fills, plotting points and lines, and inverting the screen. As with Page Designer, the editor is joystick controlled and very easy to use. In the 130XE version, you can use a KoalaPad or Atari Touch Tablet to control the graphic editor as well. You can load standard 62-sector graphic (such as those created with Micropainter) directly to the screen. You have the choice of loading the picture to the middle 40 columns of the page or expanding it to fill the whole width of the page.

Typesetter can load Page Designer pages, save it's own pages and load them and, of course, print out the results.

There are three different options printing, vertical full height (normal), vertical half height, and horizontal full sideways.

DESKTOP PUBLISHING continued

XLENT UTILITIES

Xlent also produces a utility to make it easier to work with their products, called Rubber Stamp. It lets you create and save your own icons, typically for use with Typesetter. It can also convert Print Shop icons to Typesetter icons, print labels, and edit 16*16 high resolution fonts for use with Typesetter. The Rubber Stamp graphic editor is quite versatile. It lets you edit four icons at once, and move, expand, shrink, mirror, duplicate, reverse and invert any icon. You can use a joystick or touch tablet, and it has the capabilities to circles, spheres, ellipses and boxes. The manual is weak, but the package is relatively simple to use.

The final tool in the Xlent toolbox is Print Shop Interface. With this program, you can create Print Shop icons and fonts from 62 sector picture files, change a picture into the Screen Magic format, and capture part of a picture file as a Print Shop icon. You can also convert a Typesetter to a letter in a Print Shop font, so you can have multiple graphics on a Print Shop Page. PS Interface can also convert Print Shop fonts into Typesetter.

NEWSROOM

Newsroom, by Springboard, puts five different "departments" at your disposal to publish your newsletter - the press, copy desk, banners, layout and photo lab. These are selected from a main menu screen using a joystick.

You need to understand how a simple newsletter front-page is laid out. Across the top of the page is the banner, where your headline goes. The rest of the page is broken up into six equal parts - two columns with 3 panels each. You can also choose to dispense with the banner and have a page consisting of eight equal panels.

Printed results from the Newsroom are excellent and certainly worthy of being used in a newsletter, provided you can live with the panel restriction layout. Another important note: The Newsroom has difficulty working with anything but the Atari 1050 disk drive and Atari 850 printer interface.

The newsroom includes over 600 pieces of clip-art, and other disks are available. You can also create your own clip-art using the Converter, as explained above. Text can be in one of several fonts and sizes. You can also use the graphics tool section to add lines, circles, plot points and pattern fills. There are 10 pen shapes and fill patterns, and the graphic tool even includes a magnify function for drawing pixel-by-pixel. The banner is limited to a pre-set size, but within that limitation, you have everything you need to make a fancy headline. There is even an undo function (called "Oops") which is available in several other departments as well.

Once you complete a banner, you can start putting together your other panels. These usually consist of graphics (visit the photo lab) and some text (visit the copy desk). The photo lab offers the same tools as the banner, although here you can cut out part of your creation for use as the actual photo.

At the copy desk, you add text by typing it into a simple word processor. This tool even includes some block fuctions. Three different fonts and two sizes are available, with the larger font being more appropriate for a headline, while the smaller font is used for the body of the article. One large and one normal size font can be mixed in a panel, though not on the same line. The text automatically flows around a photo, and you can even move the photo and the text will reflow around it.

To complete a newsletter, you must finish all six or eight panels and save them to disk. Then you use the layout department to specify the position of the panels on the page and use the press department to print them out. Note that it's up to you to make sure that text in panels flows smoothly from

DESKTOP PUBLISHING continued

one to another. There is no way to load word processor text from disk and place it in a panel.

NEWS STATION

News Station from Reeve Software is similar to The Newsroom in its layout concept. Eight panels (called "plates") make up the page. News Station itself doesn't support a banner, by adding News Station Companion, you can use banners. As with The Newsroom, each panel is saved seperately to disk, but News Station Companion lets you combine all eight files into one (much smaller) file for printing.

News Station toggles between graphics and text modes using keystrokes. In graphics mode, you can import 62-sector picture files directly, add multiple Print Shop icons in three sizes, or create your own pictures using the graphics editor. You can also import and add compressed picture files using a utility included in News Station Companion. The graphics editor includes all the standard functions, and can be controlled with a joystick or touch tablet.

In text mode you can add text, either typed in directly from the keyboard or loaded from an ASCII file on disk. This is the only package with this capability. Unfortunately, News Station does not support word wrap.

News Station comes with five built-in fonts, but can use any standard font in eight widths and heights. This variation in width and height lends considerable flexibility in constructing headlines, sub-heads and the body of the text. Multiple fonts can be used in a panel, even mixing them on a line. However, News Station does not automatically flow text around graphics. When importing ASCII text, the text must be short enough to fit in one panel.

Fortunately, News Station Companion adds still another capability. It can load a large text file and automatically break it down into the eight panels for you.

This page can have one, two or three columns as well. If the file is longer than a page, the text can be continued on other pages, another feature unique to the News Station with its Companion.

If any of the above packages interest you, why not get in touch with Derek Fern of Micro Discount. I don't know how many of these packages are still available, but I do know that he stocks one or two of them. Contact:

Mr. D. Fern.
265 Chester Rd.
Streetly
Birmingham
B74 3EA.
England.

TEL. 021/3535730.

This article was first published in Antic June/July 90, by David Plotkin

APOLOGY

With the conclusion of the Parallel Bus Interface series, in issue 9 (last issue), there should have been 4 diagrams included. Unfortunately due to a breakdown of the photocopier and John trying to repair it, forgot about the diagrams.

I also had been very busy with the book and had only two weeks in which time I had to set up and print the newsletter and so I completely forgot to leave spaces for the diagrams. When John couldn't get the photocopier repaired in time to get issue 9 copied before the issue was due to be posted, he had to get the copying done on a different machine, unfortunately he didn't notice that the diagrams were still missing.

So please accept our sincere apology, you will find the diagrams as flyers in this issue.

TWAUG

THE COMPLETE and ESSENTIAL MAP

This BOOK is now ready for dispatch.

Mapping the Atari is no longer available. So the Complete & Essential Map is very important for the XL-XE users.

We appreciate that some of our readers are having hard times at present and are unable to pullout the £16.00 plus postage and packing. We at TWAUG would be very happy to accept payment for the book in instalments, we leave the amount you pay up to you. We will forward the book on the final payment.

This really is the first good book published for the Atari 8-bit in a number of years and we wouldn't feel good knowing that some people are unable to afford the book. Our Motto is "We will help in anyway we can", so we hope this offer will be of some help.

The postage rates are as follows:

For the U.K. =	£1.50
For EUROPE =	£2.50
For USA & CANADA OVERLAND=	£2.50
For USA & CANADA AIRMAIL =	£5.50
For AUSTRALIA OVERLAND =	£2.50
For AUSTRALIA AIRMAIL =	£6.50

Please note: These Postage Rates were obtained from the Post Office after weighing the Book.

Payments from oversea customers should be made by:
International Money Order, or Cheque made payable in (POUND STERLING) or send your own Currency by Registered Post.

TYNE&WEAR
ATARI
USER GROUP

T.W.A.U.G.
P.O.BOX No.8
WALLSEND
TYNE & WEAR
NE28 6DQ

CODING CAPERS COLUMN.

MUSIC DURING DISK-DRIVE INPUT/OUTPUT

by Andrew C. Thompson

Hmmm... At the time of me keying this article into Textpro ver. 1.2a I've a fag in one hand and a can of Konigsbacher in the other, and I'm laughing since your probably wondering which hand I'm using to type with!? Take my word for it, I'm very dextrous!

Just before I venture into this rarely (if ever) documented subject, I want to ask you a question. Do you ever try to build an impression of the person behind the keyboard by the expression of the person's article? If so, then I'm already giving you a totally false one! I've only recently picked up this bad habit of smoking, and in case you didn't know, Konigsbacher is a German brew of lager which is very nice stuff! It's 4.8% proof and goes down very smooth. It's a bit like stella but smoother, even smoother than Scorpion dry if you've tried it?

Oh well, as you can see I'm rambling on a bit... You don't mind do you? Anyhow, if you find any Konigsbacher errors in the article coming up then you'll probably find all the missing characters in these first paragraphs, just fill them in!

Here we go then. Yes, it is possible to play music with your Atari whilst you load information from the disk-drive. A penpal of mine asked me if I knew anything about this a few months ago, but I never really delved into it then, so my apologies to you Nir, here's my proper answer.

When the Atari disk-drive is in it's loading phase it utilizes POKEY music channels 3 and 4 for baud rates and although I don't like to say you can't do something on the Atari, it doesn't seem immediately possible to use these 2 channels to play music during load. I haven't really investigated this subject properly so maybe it is possible. Perhaps with a complex Vertical Blank routine it is possible, but I'm a fairly lazy programmer to figure a routine to do this very task, so I'm going to give you all the details to 2 channel music during I/O.

OK then, channels 3 and 4 are baud rate use during the I/O IRQ's, but channels 1 and 2 can be used freely, the only snag is that you'll have to use an immediate VBI (Vertical Blank Interrupt) to have a half-decent music routine. Try the following Basic program just to prove that my statements are correct:

```
10 DATA 104,173,11,212,208,251,169,17
12 DATA 141,34,2,169,6,141,35,2,96
14 DATA 169,163,141,1,210,141,3,210
16 DATA 173,10,210,141,0,210
18 DATA 165,203,141,2,210
20 DATA 230,203,76,98,228
22 DATA 104,32,83,228,96
24 REM
30 FOR I=0 TO 45
32 READ D:POKE 1536+I,D
34 NEXT I
36 X=USR(1536)
38 STOP
```

Firstly, we'll interrupt this program at this time just for us to check that the music plays during the immediate Vertical Blank. When you've typed and run the program, some strange (and easy) sounds should come out of the first 2 music channels. From channel 2 should be heard a decreasing frequency, whilst channel 1 should be playing random tones like the sound of the amoeba in Boulderdash the game! So that's how he did it, eh!?

Right now, all we need to do is to access the disk drive. If you haven't loaded DOS then don't fear since we'll use the SIO already installed inside the computer to read sectors from the drive. Now add the following lines:

```
50 POKE 769,1:POKE 770,82
52 POKE 778,1:POKE 779,0
54 POKE 772,0:POKE 773,PEEK(106)-128
60 X=USR(1577)
62 GOTO 60
```

CODING CAPERS COLUMN. continued

There you have it, all you have to do is type CONT or delete line 46 and RUN the program from the beginning and you've 2 channel sound while the disk-drive is accessed!

The I/O bleep can be silenced also if you wish, by POKEing location 65 with 0. POKE with 1 to resume that irritating bleep if you really want to?

Well, I might have brought the ability to playing music during I/O on the drive to your fingertips, but what really needs to be coded now is a music routine so that you can write your own music to play during the load of some program. Thus I will leave this to some of you experts out there to write to me. Now come on, I've been good enough to give you the information so is someone going to be good enough to send me their routines to publish next time? All of you presently less-knowledgeable BUT up-and-coming programmers sure would like to get your hands on a routine wouldn't you! So come on experts, let's see what you can do. There's a prize in it for the person who's routine appears in my column next time, the winning entry must get to me before the end of August and I will be judging it by shortness, simplicity and ability!

My address is listed below, but remember to head the address as shown, and if you expect a direct reply then please enclose a stamped addressed envelope since us doleys can't afford the postage!

TOMO's TWAUG MAIL.
----
10 THORNCLIFF COURT
ST. DIALS
CWMBRAN
GWENT
NP44 4NE

Don't forget now, besides the music routine competition, you can also write to tell me what coding capers you would like me to delve into for future columns. So come on, what do you really want to know about? More than 4 colours in graphics 15, playing samples, Turbo-Basic' token codes, keying sheet-music into commercial music packages, Vertical-Blanks, the XL/XE OS, PMG's, software sprites, scrolling text through PMG's, different fonts on the 1029?

They are just a few subjects that I might be able to help you on, but if you want to know about something not listed above then I challenge you to test me!

THE OL'HACKERS ATARI USER GROUP INC.

O.H.A.U.G. is an all 8-bit user group in the State of New York, they are producing a bi-monthly first class informative newsletter on disk.

The disk is double sided full of news, views, articles and bonus games and/or utilities. The disk has its own printing utility which you can use to read the content of the disk on screen or make hard copies.

A large PD Library is also available.

Some of the T.W.A.U.G. members are contributing to the OL'Hackers newsletter and the OL'Hackers are contributing to the T.W.A.U.G. missive.

We are sorry to inform you that membership role has now been closed and no new non-local members can be accepted. The President:

A. Pignato
O.H.A.U.G.
3376 Ocean Harbor Drive
Oceanside, N.Y.11572
U.S.A.

GAMES REVIEW

by Mark Fenwick

BATTLESHIPS

The April AMS proved to be a great day for New software for the faithfull 8-Bit, one such title from A.N.G., Created by Mirage Poland, is Battleships.

Remember the classroom Battleships of yesteryear or the MB games versions, all holding a simple gameplay with a strong addictiveness. Well, forget those, 'cause here's a version of Battleships you shouldn't tire of for quite some time, believe me.

Battleships comes nicely packaged with a cassette inlay card depicting a ... yep, you got it a Battleship, enclosed too is an instruction sheet, not really necessary but there all the same. While booting the disk an excellently drawn Battleship hits the screen followed by the best flip disk prompt I've ever seen, shown in a split screen mirrored form. This alone gives you quite an insight into what a good quality title you've purchased! Once the disk is flipped, loading becomes quite rapid to say the least as decrunching data, as they call it takes place. The combined title and options screen appears with two Battleships at the upper half while the lower shows one/two player option and one controller. During this a rumbling battle type sound can be heard giving quite an atmospheric feel to the game, press select to choose your option.

The first screen you see after making your selection is of very high quality in both graphics and colour. The right of the screen shows a grid of 20 x 20 while the left has your five battleships drawn in hi-res. graphis and coloured to a proper perspective. Of course the first job is to place the ships on the grid in your desired positions. All five have been placed at random so you can leave them where they are or move them accordingly. Movement is easily achieved by moving a cross hair on to the ship you wish to move and pressing fire. The ship on the grid will change colour to indicate which ship is to be moved, simply move the joystick in any direction to place it once happy you move on to next and so on. At the lower left of the screen is a square marked 'rotate', pressing fire on this moves the ship around so as it can be placed in a diagonal fashion. Once you're happy place the cross hair over the End square to input these positions. On a two player option the first player must look away while their ships are placed.

On entering your ships on the one player mode the grid will go blank and the computer will place 20 shots on the grid at random. Once these shots have been placed the grid changes to show the battle sequence, which involves a well detailed front end of a battleship with its giant guns firing towards the horizon. A bomber flies in low from the cloudy skyline, the screen shakes with every shot as shells break the water's surface. An apt piece of music and battle sounds accompany this great part of the game. Though a little longwinded this particular part of the game adds a tense atmosphere, in both sound and effects as you watch and hope that a hit won't be made against your fleet. Each miss is shown as a splash while a hit is shown as a flashing glow on the horizon, at the same time the ship that's been hit will sink a little. Now it's your turn only this time your opponents fleet is now displayed on the left half with an empty grid to the right. Simply move your target around the grid pressing fire to log where you wish to shell. After subsequent goes, your grid will show hits and misses, in according colours.

Like with Battleships of the past the game continues until either party has sunk the others fleet. Once a ship takes it's last hit it will be shown sinking into the ocean and will be replaced with an SOS life ring. Number of shots per round soon deteriorates on each consecutive go depending on how many hits are achieved.

Overall, Mirage have done an excellent job in putting an old classic game on to the Atari. It lacks nothing and you would have been hard pushed to improve on what they've done here. The well drawn ships, hi-resolution graphics, apt tunes, battle sequence and excellent sound effects make this a game very worthy of a part of anyones software collection. Though it is a double sided disk, it comes at an exceptionally low price of £4.50. Available from Micro Discount, order your copy today!

THE BRUNDLES

The rumours that Lemmings would never see the light of day, were far from right. For now after two years in the making Lemmings or Brundles as it is called is here!

For those of you who are not accustomed to the game Lemmings, read on. Lemmings was created by a company called Psygnosis and is available for all the top formats, ie., Sega, Nintendo, ST, Amiga and PC. As you can imagine it wouldn't be feasibly possible for the company to consider financing an Atari 8-Bit version as sales would have to be in tens of thousands for any financial reward. Sad though the case is, you must agree such sales wouldn't be...Sorry, let's not get depressing! So through the strong dedication of the German based KE-Soft lads, who have spent so long doing their excellent conversion of the game (and a damn good job at that) that Lemmings renamed The Brundles hits our 8-Bit screens!

The Brundles is a puzzle type game with an addiction that can not be felt from any game ever made for the Atari. Brundles are small rodent type creatures (Lemmings actually) that have little regard for the gift of life. They will walk aimlessly into any danger that they encounter. If there's a fire they'll simply walk in to it and be burned alive! A deep cavern, no problem for a Brundle, he'll simply fall down it, spikes, he'll walk in to them, and what's worse his pals will follow him to their doom too! This is where you come in, as it's your job to aid the Brundles to their exit. Certain tasks must be appointed to individual Brundles to assist in saving others from certain fate! Until at least the next level where the pressure soon gets a little tougher.

Brundles comes on two disks, the first being the program while the latter holds the 100 levels.

GAMES REVIEW continued

Soon after booting the disk you'll see the title screen, from this alone you know you're in for a treat. From here you select your device for playing the game, let me tell you the only thing missing here is a light gun! You can select either Joystick, Mouse, CX-85 numeric keypad, Trakball, Suncom Animation Station, quite a selection, eh?

The play area to Brundles is quite vast, with only a small portion of the bottom of the screen taken up by the instructions you allocate to the Brundles. These instructions vary and may not all be needed to complete a level, it's down to your own judgement. To assign an instruction simply place the cursor over the instruction desired and press fire (or equivalent) then place the cursor over the Brundle to act as instructed. These instructions are shown as a Brundle icon acting out his particular duty, ie., The Digger is shown as none other than a Brundle with a Pick, what could be simpler! The rest of the icons and their retative instructions are Floater(able to sustain a great fall), Climber(able to scale walls), Blocker(to stop other Brundles from passing him), Builder(to build stairway type bridges), Bomber(to be self destructed wiping out only scenary and not other Brundles), Bashers(to bash through scenary on the horizontal), Miner(able to dig down through scenary at a diagonal) and finally Digger(to dig down at a vertical). Also displayed with these are the timer, number of saved Brundles, rate of release of Brundles (wich can be increased/decreased) and Nuke which is selected should you make a mistake and wish to blow up all your fury little critters.

Playing the game is pretty simple, a combination of both quick reaction and quick thinking. As you start a level you'll be told how many Brundles you must save to go on to the next level. From here you begin play. The graphics are very highly defined with colourful scenary of various types from walls, land, fires, trees you name it, it's here. As you start a level the trap door will open and tumbling out of this fall the Brundles, by moving your cursor left to right you see the exit to which you have to safely get your Brundles to. As the Brundles plod around following each other in single file, it's up to you to assess the situation and instruct certain Brundles accordingly. For example you may start where your Brundles walk straight in to an area they become trapped in. You could opt to instruct a Brundte to dig a hole, bash his way out or blow his way out, the choice is yours. Whatever you do select to instruct whatever the Brundle concerned does, say dig a hole the others will follow him as he digs his way out. You'll soon get to grips with the early levels in making good or bad decisions and it won't be long before you assess the situation quikly enough to save Brundles from a tragic death!

Each level has it's own password so keep a pen handy, as the next time you play you can enter the password option to save starting over each time.

Overall The Brundles is none other than a masterpiece, a living testament to the fact that almost anything is possible for a conversion to the old faithful Atari. The music, presentation, graphics, colour, gameplay is all here and done with sheer excellence. Most of the scenarios are taken from the original Lemmings plus many from the minds of the Ke-Soft crew. It recognises just what a real professional team the Ke-Soft lads are and that this professionalism has stayed with the 8-Bit.

The Brundles is truly the Best ever Atari 8-Bit release we'll ever see, second to none! The game is appealing to all ages with an addictive feel never felt in any other puzzle game.

The Brundles is available from Micro Discount or direct from Ke-Soft themselves. The price of £15.00 may seem a little steep for a release these days but considering the time, effort and dedication put in to it it's worth the price ten times over. Well done Ke-Soft!

MARK'S GAMES COLUMN.

This issue we have two games that should be easier to solve, Choplifter and The Goonies. Choplifter provides some useful notes to help you in the game, and The Goonies is the full solution. It would be nice to get some new contributions, so get those solutions out and send them in!

CHOPLIFTER!

RULES:

Hostages are locked in barracks. 16 per barracks. One barracks has been blown open so the hostages can get free. You will need to figure out how to free the other hostages without getting them killed.

The object of the game is to retrieve the hostages, then return them to home base safely. You must land your helicopter close to the hostages so they can climb in, then return and put down on the landing pad next to the post office in order to allow them to scramble out. Don't land on the hostages. That kills them.

The score is at the top of the screen. The LEFT lemon shows how many hostages have been killed. The MIDDLE lemon shows the number of hostages inside the chopper, which has a seating capacity of 16 hostages. The RIGHT lemon shows the number of hostages safely returned. The maximum score is 64.

You get three helicopters per game. The game ends when you lose your third helicopter or all the hostages are dead or rescued.

CONTROLLING THE HELICOPTER:

The chopper will respond logically to up, down, and sideways thrusts of the joystick control. A short press of the joystick button will fire. A medium press will put your chopper in "tank attack" posture, facing you, so that the chopper can shoot back at the tanks on the ground. A longer press will turn the chopper completely around.

MARK's GAMES COLUMN continued

THE ENEMY:

The Bungelings have three weapons at their disposal. The first are tanks, which amble along and will kill hostages or destroy helicopters which have landed or are near the ground. To shoot back at the tanks you must have your helicopter facing forward. The second are jet fighters, which scream out of the sky and shoot air to air missiles at you. You can shoot the fighters down. The third and most deadly enemies are the drone air mines which home in on your helicopter. These are the only enemy vehicles which will attack you on your side of the barrier, at the post office, as well as in the field of battle.

SPECIAL KEYS:

START key - To begin play.
BREAK key - To pause, and resume play after a pause.
Francis Scott Key - Plays piano at the post office.
Boris Spasskey - Plays chess at the post office.
Albuquerkey - I had a college roommate from there once.

NOTE:

It is necessary to remove all cartridges from your computer before loading this program. It will not load with a cartridge installed.

THE GOONIES From Adventureland BB 914-528-5259

Can you become a goonie????
The easy helper for GOONIES

scene 1 :

The object is to get to the tunnel under the house. To get there you must put out the fire by hitting the water cooler over. Sent one kid to the attic by placing the chair under the opening and jumping up on it and climbing up the ladder. In the attic there is a printing press, this will throw money through the window. The witch will stay outside and catch the money and you can send the one goonie downstairs and put out the fire and climb down the tunnel. Then quickly send the goonie in the attic through the fireplace. done.

scene 2 :

You have to get the key to open the bottom door. Send one goonie down to the bottom and put him on the crank gear and open the middle chamber rock. Send the second goonie down to the floating ball in the chamber. Then put the second goonie right next to the door. Use the goonie on the ball and send him on the floating ball in the chamber. Then put the second goonie right next to the door. Use the goonie on the ball and send him under the pails to the ledge and grab the rail above him and get the key and send him down to the door. Watch out for the bat flying around the cave.

scene 3 :

To get through this scene you must burst the pipe on the right side by the tunnel. To do this you must shut two run off valves. The first is the one on the middle left chamber and the second in the top right. Just send one goonie on each valve and your through. Watch out for the criminal at the right, shooting.

scene 4:

You must remove the three boards blocking the escape tunnel at the bottom left. To do this you must send the little rocks rolling down the cave. Send the little fat goonie to sit on the trap at the bottom. Take the tall one and use him to direct the rolling rocks. On the first level get the rock moving from right to left so it rolls against the wall and rolls back. On the second level drop the rock through the trap door going left to right. The third level drop the rock going right to left. The rock will drop through and little tunnel aside of your escape tunnel. All this must be done before the hammer down at the bottom hits the bell and sends out all the bats. There is no place to hide from the bats that I have found. A rock must go though the little tunnel three times to escape. Of course you know that you pull on the chain to open the trap doors.

scene 5 :

The biggie to me. You must stack the little geometric eggs that the big bird drops by the tunnel at the bottom left of the screen. To do this I just take the eggs and throw them down to the bottom right room and send a goonie to the top right room to pull down the bone hanging on a chain and to make the bridge and to stack the eggs up. When done just send the goonies over the lava pit, you can jump it, and climb the eggs and to the next screen

scene 7 :

You must get to the tunnel at the right of the screen but an octopus blocks your way. To get through you must drain his little lake by jumping on the blue pinball like flipper. The flipper will not go down because of a locked bar underneath it. To remove this you have to hang one goonie off of the bar. But the goonie cannot get to this. So you have to use the 'box' hanging from the ceiling. To do this you must hang a goonie off of the hanging bone at the top of the screen then the box will fall in the bottom stream. Then take the other goonie and plop him on top of the cage and hang him off the bottom of the bar. Then take the other goonie that was hanging on the bone and make him bounce off of the right 'flipper' and the little lake will drain a bit and the octopus will drop so you can proceed. Watch out for the bats again. It will take time to get to the side with the bone/flippers. But I hang off of the top rail and just run to the left and push top left. long one...

scene 8 : (last)

After all of that you get to the final screen. In this screen you have to get the treasure at the top of the ship. The first thing you do is take the little goonie and run him down to the cabin that is almost in the middle of the ship and throw the level to the right. Then take the big sped and run him through the door next to you and then to the top

MARK's COLUMN cont.

room to the left and through that lever and you go through the door at the top left. Then get to the bottom of the ship (you and the big guy) and send the big guy to the top and push the treasure chest at the top to the right so that a few coins fall off the side of the ship and the witch will chase them and fall off. Then take the little goonie and position him on the sail mast sticking out from the main mast. When he is standing on the sail mast take the big guy and go to the first room where you were in and through the lever again and the goonie will get raised to the top and then he can jump to the treasure chest and you take the big guy and meet both of them on the top treasure.

You are now a goonie and you see the massive ending screen and it starts over.



CONTENT

On this issue disk are three games ad four utility programs.

Lets me explain the games on Side A first. I usually don't play games as a rule, I don't have the time, but I made an exception so I could say a few words about them here.

SCORE 4 is a TIC-TAC-TOE or NOUGHTS and CROSSES type of game, but instead of three crosses you need four bar in a row to win. You need the joystick to move a cursor in any direction and you are playing against the computer. There is a different colour for each bar and a 'C' in front of the coloured bar the computer is using.

When booted you are presented with a board which has 16 pegs on it and a split cursor in the left hand bottom corner. The computer usually starts, (it has done so when I played it) you must place four bars in a row, either vertically, horizontally, diagonally or on top each other on any peg. You must block the opponent by placing one of your bar in its way, but there is still a possibility to win by having four in a row at a different level. I am sure you will get the hang of it once you've lost a few times, I've tried to beat my cheating computer but I couldn't.

The second game on Side A is called TUNNEL TREKKER, again use the joystick plugged into port one to move the tittle fellow. You must guide the little man out of the tunnet before the time runs out and you must also watch the electrified gates, if you touch one of these one of your lives will be lost. Press START to begin and move the man up to the top floor by pushing the joystick forward and guiding him between the pillars above him, after that move through the openings in the walls. Pick up the question marks first and then the key, only one key can be picked up you must then open the gate, to pick up the object move the little fellow over that object. The keys are coloured and open only that same coloured gate. There are two keys to be picked up and two gates to open before you can move out of the tunnels.

There is a time limit as well so you must hurry to get out of these tunnels to the next level. How many levels there are I cannot tell you, I haven't been able to get out of the first one yet. When the time beats you you loose a life and go back to the start. Good luck!

Now let's have a peek at the utility programs. First, Print Shop utility program this is set as a AUTORUN.SYS because it needs Turbo Basic to run and you'll find it will run straight from this disk.

This program is for use with Print Shop icon disks, once booted you are presented with a menu. From this menu you can print the directory in alphabetical order and also print it to a disk jacket, it is printed very neat onto it. The PSIcons can also be viewed selectively or the full disk alphabetically. A small doc file is on the disk.

The next utility program is called DLGEN6.BAS, as the extender tells you it is a BASIC program. This utility is a mini assembler to create and view the DISPLAY LIST on the screen. You can run this program directly from this disk. When loaded, you are first asked for the highest graphics mode number, enter a number and press return. All you need do after that is watch the prompts and press 'Any key' and at the end the Display List is displayed on the screen. The doc file is on the disk.

The doc file for this next program 'TEXT TIDIER' you will find on Side B of this issue disk. This program is just what the title implies, it strips out Control-J characters (Linefeeds) and converts Control-M characters into ATASCII Returns. All ASCII files use these funny looking characters, especially when downloading text with the modem. Or, conversely Tidier will allow you to remove editing commands from an Atari 8-Bit word processor text that is being prepared for modem or null-cable transfer to IBM/etc. systems. This program also lets you break up down loaded large files into smaller more manageable text.

The MAKEMENU.BIN is a binary program, it can also be run straight from this disk. It lets you rename menus or you can create menu with up to 20 character long names. You must use a formatted disk with DOS & DUP.SYS written onto it than just follow the prompts. No docs available for this utility.

On Side B of our disk you will find only one program and it is a Trivia type of a word guessing game, it's called 'WORDS are FUN'. When the disk is booted you are presented with two choices, you can read the instructions first or begin the game, I would suggest to get familiar with the game first. You can also run the instructions seperate by going into Basic and running the HELP.BAS file first or make a hard copy of the instructions. You will also find quite a few title files included on the disk, which I believe should be on a seperate disk. These files include such titles as Phrases, Quotations and many other such titles for use with this game.

ENJOY this issue 10 disk!

More Support From

RICHARD GORE

JAWBREAKER A classic arcade game based on Pac-Man. Two different mazes included originally sold as two games!
Price: £4.95 ($10)

MOUSEKATTACK Great maze game - You must plumb the levels of Rat Alley. One or two player (simultaneous) game options.
Price: £4.95 ($10)

Jawbreaker & Mousekattack are available on disk, tape or Rambit Turbo Tape. Please state which when ordering.

Special price: You may also buy both Jawbreaker and Mousekattack for only £6.95 ($18)

In association with Visionaire Software....

ARENA The full 50 level version of the excellent puzzle game that was a demo bonus on Page 6's issue disk.
Price: £5.00 ($10)

BUBBLE ZONE A fast blast them set on a grid being invaded by ever expanding bubbles. Collect the tokens and see how far you can advance.
Price: £5.00 ($10)

Arena and Bubble Zone are available on disk only and require at least a 64K XL/XE computer.

HARDWARE:

YORKY 256k plug-in memory upgrade with manual and support disk. Very few units left.
Price: £50.00 ($90) + £2 p&p (UK £2, EC £3.50, world £5)

All software prices include p&p to UK, overseas please add £2 per order unless otherwise quoted. Payment by cash, cheque (payable to Richard Gore) or IMO Prices in dollars are for USA customers and include shipping but payment must be in US dollars cash, preferably registered post!

Contact address:
RICHARD GORE, 79 SPROTBROUGH ROAD, SPROTBROUGH, DONCASTER, DN5 8BW, ENGLAND
Telephone: (0302) 784642

Plus coming soon... new software from Germany and several classic games and possibly the ICD/OSS product line as SpartaDOS X, R-Time 8, Action! etc.

*** Keep in touch for more info. ***

CURRENT NOTES

Helping Atari Owners Through the World of Computing.

Current Notes is published monthly (excluding January and August), in the U.S.

This magazine or you can call it newsletter has 80 pages full of computer news and very good articles that covers the Atari 8-bit and ST. It comes in full size of 11 inches by 8 1/2 inches.

SUBSCRIPTIONS:

Europe subscriptions is $69 per year.
Bankers drafts made payable to Current Notes
to: CN Subscriptions
122 N. Johnson RD.
Sterling, VA 20164

NOTE: VISA and MasterCard accepted.
Call (703) 450-4761

Editor's Note:
We at TWAUG are receiving the CN magazine monthly and we are always looking forward to it.

PHOENIX.

The new disk based news letter from Ireland, produced by Robert Paden.

PHOENIX a double sided disk, side 'A' will be packed full of text files containing Articles, reviews and much much more. Side 'B' will contain a good selection of PD software.

If PHOENIX it will only be available from Robert Paden himself.